EM472 MECHANICAL ENGINEERING DESIGN

Project Management Software: Microsoft Project

Microsoft Project is the software package that will be used to carry out the project management concepts related to PERT / CPM. Specifically it will be used to generate and update the PERT charts, and the Gantt charts used in managing the design projects. The software is accessible on the PC's located in the MechE playground and the other computer labs (except R108). There is an on-line tutorial that can be used in conjunction with the ATV example from the PROJECT MANAGEMENT notes to introduce the software.

The tutorial has a series of tasks that cover the use of the software. The basic information that is needed for use in EM472 is contained in subtasks 1, 2, 3, 6 and 7 of the section called **Create a plan**. These notes briefly outline which subsections should be covered to gain a working knowledge of the software. The time required to go through the tutorial using the ATV example is roughly 60 minutes. In these notes items in bold are the subtasks and steps in the tutorial. Items in regular font are suggestions for completing a specific topic.

To start the software select the programs option from the start button and highlight the Microsoft Project entry. Once the software has loaded, The Help window should also be open. Select Tutorial from the Help screen. The tutorial window will launch and the first topic, **The Basics** will be highlighted. We will skip over the background on project management and begin with the second topic, **Create a plan.**

Subtask 1: Set up a project Click on the line labeled *Begin the lesson…*

Set the start date to any date that you wish to use for the ATV example. Click on >> at the top of the Help screen.

Enter the key project information

Give the project a title and use your name as the manger's name. If you want add some notes. Click >>.

Set up the project calendar

Skip this step. Click >>.

Subtask 2: Enter a task list *Begin the lesson…*

Enter tasks and their durations

Use the ATV Design tasks listed in table 1 of the Project Management notes. Click >>.

Create a milestone

Skip this step, Click >>.

Enter a recurring task
Skip this step, Click >>.

Split a task into segments
Skip this step, Click >>.

Structure tasks into a logical outline
Add the heading tasks FABRICATION, INSTALLATION, and TEST. Use the heading tasks from the last step as the summary tasks and indent the appropriate tasks under the headings to become subtasks.
Click >>.

Edit a task list
Group the tasks according to the major areas included in the WBS shown in figure 1 of the notes. Use *Cut* and *Paste* to rearrange the tasks into contiguous groups. Click >>

Subtask 3: **Schedule tasks** *Begin the lesson…*

Establish relationships between tasks
Use table 1 from the notes to define the task precedence. When selecting tasks be sure to select the preceding task first, then use the Ctrl key to select the task that follows. Be sure to include all the precedence data included in the table. Click >>.

Overlap tasks or add lag time between them
Skip this step, Click >>.

Set a specific start or finish date for a task
Skip this step, Click >>.

Add a deadline to a task
Skip this step, Click >>.

Split a task into segments
Skip this step, Click >>.

Subtask 4: **Assign resources** Skip this subtask
Subtask 5: **Schedule tasks** Skip this subtask

Subtask 6: **View the Schedule** *Begin the lesson…*

See the entire project on the screen
After completing this Click >>.

Check the project's finish or start date
After completing this Click >>.

Identify the critical path

Use the GanttChartWizard for easy formatting
Select the following after clicking on the GanttChartWizard button.
Select: Next for step 1
Critical Path for step 2
None, thanks for step 9
Yes, please for step 13
Format it for step 14
Exit Wizard for step 15
Compare the critical path from the notes to the one displayed on the screen. Compare the 28 days from the notes to what is determined by the software. This is done by selecting Properties from the File menu, clicking on Contents, and checking the Duration. These should be the same for the notes and the screen.

Click on the icon labeled "Network Diagram" located along the left-hand side of the screen. This will display a PERT chart of the project. Compare the PERT chart with the PERT Chart shown in Figure 2.

Click on Format…Layout and click the button "Allow manual positioning of boxes". Use the mouse to rearrange the PERT Chart so that it looks like what is shown in figure 2. The summary task boxes can be positioned at the bottom of the chart near the subtasks they represent. Do this by putting the cursor on the edge of the box to be moved, and clicking (the outline of the box will turn gray) and dragging the box to the desired.

You can click on the "Gantt Chart" icon to return to the data entry form.

Right-click on the cell in the upper-left corner of the data entry table and select "Schedule" from the drop-down menu that appears. The table columns will be changed and ther will be additional columns including Late Start, Late Finish, Free Slack and Total Slack

Print the one page views of the Gantt Chart and the PERT Chart, submit these to the instructor when the tutorial is completed.

Switch to a different view
Skip this step, Click >>.

See different fields in a view
Skip this step, Click >>.

Display specific information by using a filter
Skip this step, Click >>.

Sort information in a view
Skip this step, Click >>.

Group information in a view
Skip this step, Click >>.

Subtask 7: Save the plan *Begin the lesson…*

Save a baseline plan
Read this step, you can save the baseline plan to disk. Click >>.

Save an interim plan
Skip this step, Click >>.

This completes the introduction to the project management software. The steps completed here can now be applied to generating the Gantt and PERT charts for the design projects.

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